

IN THE CLAIMS:

Please cancel Claims 7 and 9 without prejudice or disclaimer of subject matter, and incorporate the substance thereof into each of the independent claims herein. Please otherwise amend the claims as shown below.

1. (Currently Amended) An encoding apparatus for encoding images of frames which form a moving image by motion compensation, comprising:

input means for inputting images of frames;

section division means for dividing the frames into a plurality of sections on the basis of the images of the frames input by the [[said]] input means;

representative image setting means for setting, as a representative image, an image of a self frame, which has a smallest sum total value of differences from a group of images of other frames in each of the sections divided by the [[said]] section division means; and

reference image selection means for selecting one representative image to be referred to so as to encode an image of a frame of interest from the representative images set for respective sections, and

wherein the image of the frame of interest is encoded by motion compensation using the images of the frames in the section that includes the representative image selected by the [[said]] reference image selection means;

wherein the section division means comprises:

determination means for determining whether or not a frame of interest is included in a section to which a frame immediately before the frame of interest belongs;

first setting means for, when the frame of interest is included in the section to which the frame immediately before the frame of interest belongs, setting the representative frame set in the section or the frame of interest as a new representative image in the section on the basis of images of respective frames in the section and an image of the frame of interest; and

second setting means for, when the frame of interest is not included in the section to which the frame immediately before the frame of interest belongs, setting a new section which is different from the section and includes the frame of interest;

wherein the first setting means comprises:

first calculation means for calculating differences between respective frames in the section and the frame of interest, and calculating a sum total value of the calculated differences;

second calculation means for calculating a difference between the representative frame set in the section and the image of the frame of interest;

representative frame setting means for, when a sum of the value calculated by the second calculation means and a threshold is not less than the sum total value calculated by the first calculation means, setting the frame of interest as a new representative frame in the section;

first threshold setting means for, when the sum value is not less than the sum total value calculated by the first calculation means, setting the sum total value calculated by the first calculation means as the threshold; and

second threshold means for, when the sum value is not more than the sum total value calculated by the first calculation means, setting the sum value as the threshold.

2. (Cancelled)

3. (Currently Amended) The apparatus according to claim 1, wherein the [[said]] section division means comprises difference determination means for determining with reference to images of frames in an order said input means inputs whether or not an image difference between neighboring frames is not less than a predetermined value, and when the [[said]] difference determination means refers to images in turn from an image of a first frame, and determines that a difference between an image of a second frame and an image of a third frame as a next frame of the second frame is not less than the predetermined value, the [[said]] difference determination means sets the first and second frames as one section.

4. (Cancelled)

5. (Currently Amended) The apparatus according to claim 1, wherein the [[said]] reference image selection means calculates prediction errors of motion compensation with an image of a frame to be encoded for respective representative images set in the respective sections, and selects the representative image that minimizes the prediction error.

6. (Currently Amended) The apparatus according to claim 3, wherein the image difference is a sum total value obtained by summing up differences between pixel values of corresponding pixels in two images for all or some pixels that form the images.

7. (Cancelled)

8. (Currently Amended) The apparatus according to claim 1 ~~[[7]]~~, wherein ~~the~~ the ~~[[said]]~~ determination means calculates a difference between an image of a last frame of the section to which the frame immediately before the frame of interest belongs~~[[,]]~~ and the image of the frame of interest, and when the calculated difference is not more than a predetermined ~~value threshold~~, the ~~[[said]]~~ determination means determines that the frame of interest is included in the section to which the frame immediately before the frame of interest belongs.

9. to 15. (Cancelled)

16. (Currently Amended) An encoding method of encoding images of frames which form a moving image by motion compensation, comprising:

- an input step of inputting images of frames;
- a section division step of dividing the frames into a plurality of sections on the basis of the images of the frames input in the input step;
- a representative image setting step of setting, as a representative image, an image of a self frame, which has a smallest sum total value of differences from a group of images of other frames in each of the sections divided in the section division step; and
- a reference image selection step of selecting one representative image to be referred to so as to encode an image of a frame of interest from the representative images set for respective sections, and

wherein the image of the frame of interest is encoded by motion compensation using the images of the frames in the section that includes the representative image selected in the reference image selection step;

wherein the section division step includes:

a determining step of determining whether or not a frame of interest is included in a section to which a frame immediately before the frame of interest belongs;

a first setting step of, when the frame of interest is included in the section to which the frame immediately before the frame of interest belongs, setting the representative frame set in the section or the frame of interest as a new representative image in the section on the basis of images of respective frames in the section and an image of the frame of interest; and

a second setting step of, when the frame of interest is not included in the section to which the frame immediately before the frame of interest belongs, setting a new section which is different from the section and includes the frame of interest;

wherein the first setting step further comprises:

a calculation step of calculating differences between respective frames in the section and the frame of interest, calculating a sum total value of the calculated differences, and calculating a second difference between the representative frame set in the section and the image of the frame of interest;

a representative frame setting step of, when a sum of the value calculated by the second difference and a threshold is not less than the sum total value, setting the frame of interest as a new representative frame in the section;

a first threshold setting step of, when the sum value is not less than the sum total value, setting the sum total value as the threshold; and

a second threshold step of, when the sum value is not more than the sum total value, setting the sum value as the threshold.

17. to 26. (Cancelled)

27. (Currently Amended) A non-transitory computer-readable storage medium for storing a program, which when executed by a computer, causes ~~cause~~ the computer to perform the encoding method of claim 16 .

28. to 29. (Cancelled)